

Driving Success

**The role of management
information in delivering a
research strategy**

Scott Rutherford

Director, Research and Enterprise, Queen's University Belfast

Strategic context

Reducing government grant funding for teaching and research

Increasing concentration of government research funding

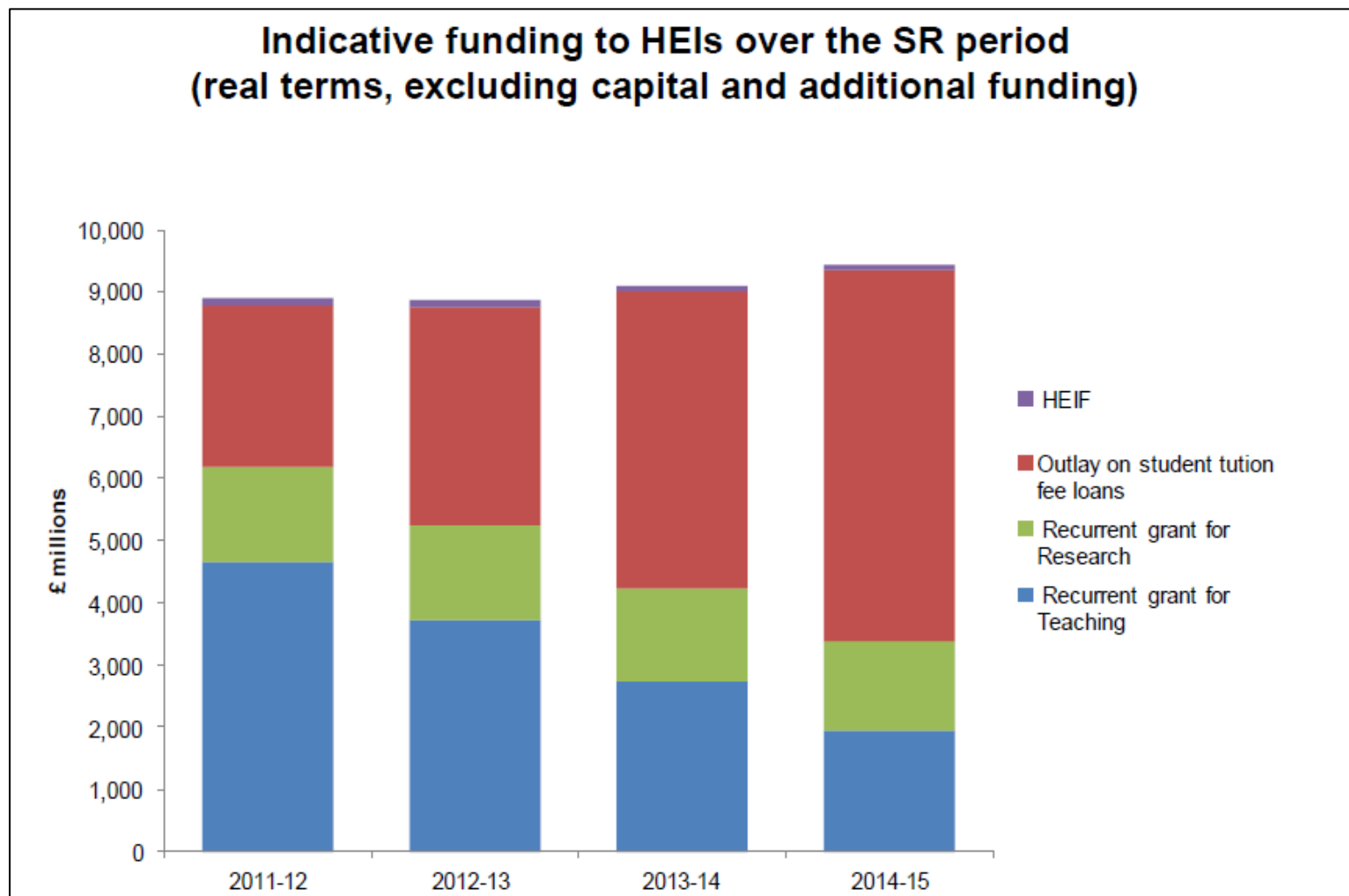
Rise of interdisciplinary and international grand challenge themes

Drive for increased multi-partner/ industry-academic consortia

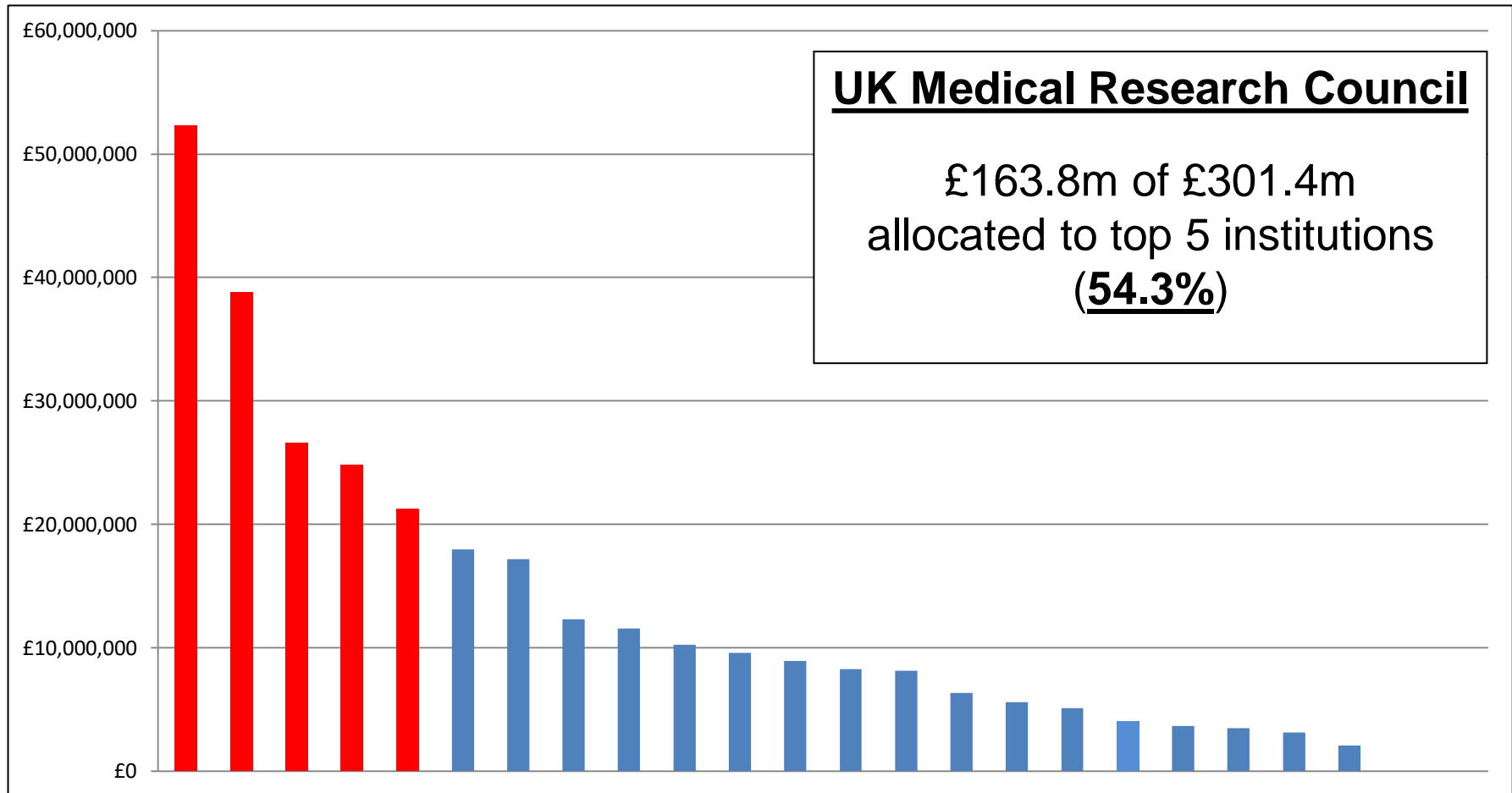
Competition to attract the best research leaders globally

Relentless need to demonstrate social and economic impact

Reduced Government funding



Concentrated funding



Responding to the challenge

- Single research groups, single institutions, or even single nations, do not have sufficient critical mass, expertise or resources to address these major societal questions, so collaboration is essential and expected; 'size matters'
- Research projects are more multi-disciplinary, -partner, -institution and – national = added complexity and risk; competition for resources remains fierce
- Big challenge for universities to work coherently and make the whole > sum of the parts
- Must demonstrate how we add to the totality of activities rather than appear as disparate groups of individual research projects – very difficult to achieve
- Need to work in partnership with other universities, (regionally, nationally and internationally) much, much more

A strategic framework



A structural framework

Research at Queen's takes place in Core Disciplines, Pioneer Research Programmes and Global Research Institutes.



A challenge-led framework

Global Research Institutes



The Institute
for Health Sciences



The Institute of Electronics,
Communications and
Information Technology



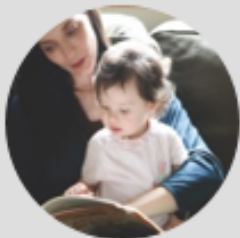
The Institute for
Global Food Security



The Senator
George J. Mitchell Institute
for Global Peace,
Security and Justice

A challenge-led framework

Pioneer Research Programmes



Centre for Evidence
and Social Innovation



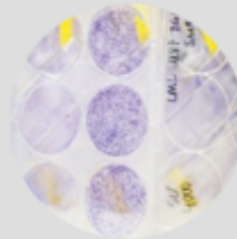
Sustainable Energy
Research Centre



Intelligent Autonomous
Manufacturing Systems



Risk and Inequality



Centre for Advanced and
Interdisciplinary Radiation Research



Materials and Advanced
Technologies for Healthcare

A performance framework

CATEGORY	INDICATOR	CURRENT LEVEL	2020 TARGET
Outputs	1. Percentage of outputs in top 10% of journals, as measured by SNIP		
	2. Average citations per paper		
	3. Percentage of outputs in top 10% of cited papers in their fields		
	4. Percentage of world-leading (4*) research outputs in next REF	Tl	1
Income	5. Percentage of income from RCUK and EU government bodies		
	6. Awards over £500k annually		
	7. Percentage of staff holding an international (non-EU) grant		
	8. Percentage Cost Recovery from research grants and contracts		
Environment	9. Number of ERC fellowships		
	10. Number of academic staff recognised through key measures of esteem	In	
	11. Percentage of publications with international collaborators		
	12. FTE PGRs enrolled per academic FTE		
	13. Ratio of DEL/non DEL-funded PGR students		
	14. Percentage rate of staff return to next REF	Tl	1
	15. Percentage of environment measured as world-leading (4*) in next REF	Tl	1
Impact¹	16. Percentage of impact measured as world-leading (4*) in next REF	Tl	1

How can Research Information Help?

- Create a clear evidence base to work from
- Help understand strengths and shape strategy
- Assist in finding opportunities, collaborators, talent etc
- Begin to benchmark performance meaningfully
- Really monitor progress against strategic objectives

But (generally)...

- Current systems used by universities are not fit for purpose
- They lack effective project management structures
- Universities are poor at delivering major projects
- There is a lack of quality products available to the sector

Making it happen...

Initiatives at Queen's University Belfast:

Strand 1: to aggregate holistic research data from disparate sources (PURE SYSTEM)

Strand 2: to drive action across research leaders in managing the research portfolio (GRANTS SCORECARD)

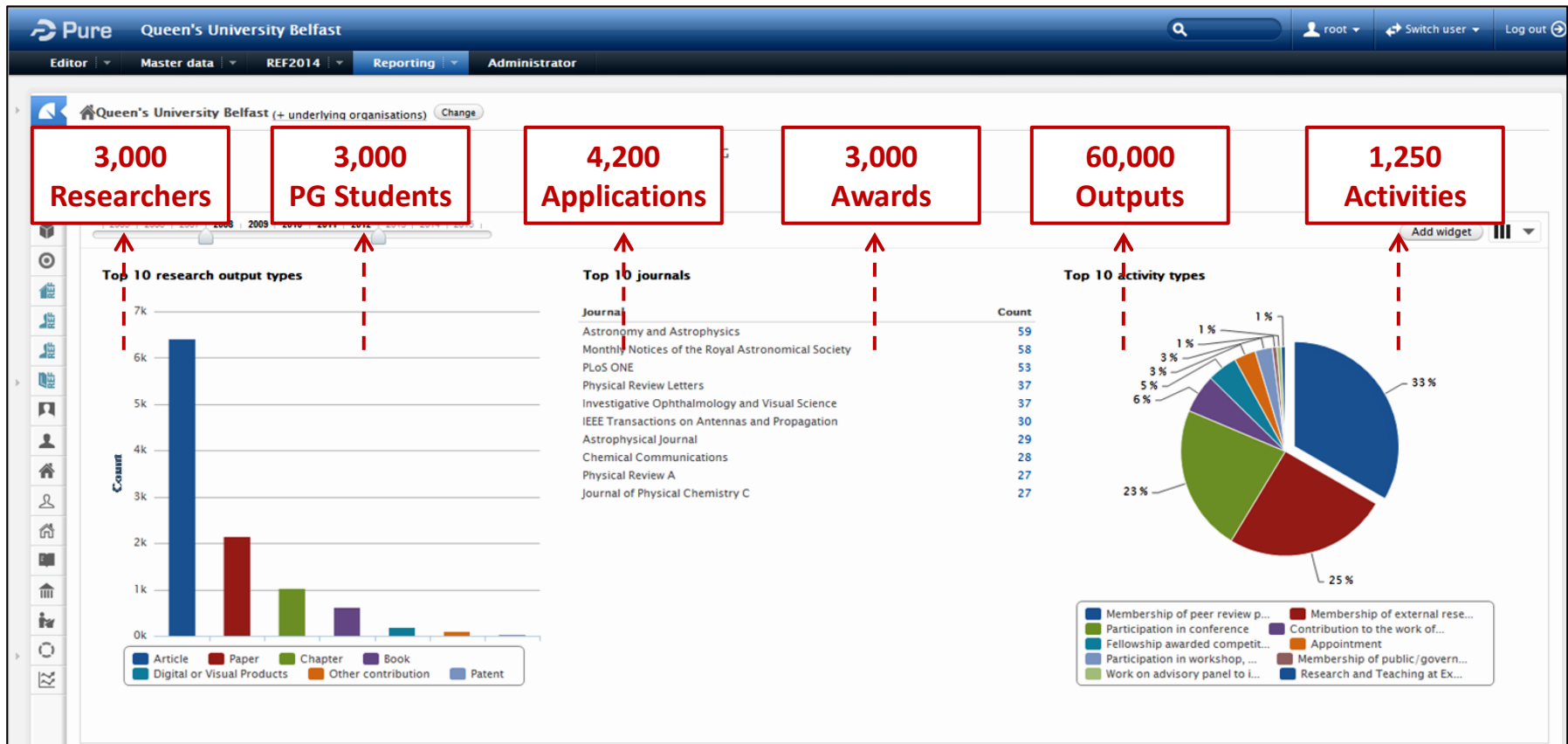
Strand 3: to understand citation performance and collaborative performance (PUBLICATION IMPACT PLANS)

Strand 1

To aggregate holistic research data from disparate sources

(PURE SYSTEM)

Aggregating key research data



Pure Profile – Engaging Academic Staff

Pure Queen's University Belfast

Personal

Personal overview

- Research output
- Activities
- Projects
- Applications / Funding
- Impacts

James McElnay
Professor
Direct phone: 5221
j.mcelnay@qub.ac.uk

Pro-Vice-Chancellor (Research and Postgraduates), School of Pharmacy 23/04/12 → present
Pro-Vice-Chancellor (Research and Postgraduates), Pharmaceutical Science and Practice 23/04/12 → present
Pro-Vice-Chancellor (Research and Postgraduates), UOA3 – Allied Health Professions, Dentistry, Nursing and Pharmacy 23/04/12 → present

[My portal profile](#)
[Edit profile...](#)

My research | My CVs and profile | Supervision | Propose outputs for REF2014

[View graph of relations](#)

Research output (68)

Multi-hospital outbreak of Clostridium difficile ribotype 027 infection: epidemiology and analysis of control measures
Al-Deyab, M., McElnay, J., Gilmore, B., Conlon, C. & Scott, M. Jun-2011 In : INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY. 32(3), p. 210-219. 10 p.
Research output: Contribution to journal › Article

Healthcare professional experiences and attitudes on unlicensed/off-label paediatric prescribing and paediatric clinical trials
Mukattash, T., Hawwa, A., Trew, K. & McElnay, J. 2011 In : European Journal of Clinical Pharmacology. 67, p. 449-461. 13 p.
Research output: Contribution to journal › Article

Metronidazole Population Pharmacokinetics in Preterm Neonates Using Dried Blood-Spot Sampling
Suyagh, M., Collier, P., Millership, J., Iheagwaram, G., Millar, M., Halliday, H. & McElnay, J. 2011 In : PEDIATRICS. 127, p. E367-E374. 8 p.
Research output: Contribution to journal › Article

Clinical and economic impact of contaminated blood cultures within the hospital setting

Projects (16)

Use of dried blood spots – Arthritis Research UK Ref 19421
McElnay, J. & Hawwa, A.
1/08/09 → 31/12/99
£30,000, Arthritis Research UK (Arthritis Research Campaign) [R270]
Project: Funded Project › Research

HEA UNIV OF NEWCASTLE UPON TYNE – 523
Collier, P. & McElnay, J.
1/08/06 → 31/12/99
Project: Funded Project › Research

CONNECTED HEALTH
McElnay, J.
1/08/08 → 31/12/99
£60,000, Northern Pharmacies Ltd Trust Fund [R299]
Project: Funded Project › Research

DEVELOPMENT OF RESEARCH LINKS WITH THE UNIVERSITY OF ALBERTA
McElnay, J.
22/05/09 → 31/07/99


Add new

My messages
Messages 0

Help and support


Research Portal: External Profiles

[Profile](#) [Publications](#) [Projects](#) [Journals](#) [Publishers](#) [Activities](#)










Professor Christopher Hardacre


- School of Chemistry and Chemical Engineering - Head of School
- Centre for the Theory and Application of Catalysis (CenTACat)

 C.Hardacre@qub.ac.uk

Phone: +44 (0)28 9097 4592

For media contact email comms.office@qub.ac.uk or call +44(0)2890 973091.

       0

 [View graph of relations](#)

Publications

Critical role of water in the direct oxidation of CO and hydrocarbons in diesel exhaust after treatment catalysis Published

Research output: Contribution to journal › Article

Critical role of water in the direct oxidation of CO and hydrocarbons in diesel exhaust after treatment catalysis Published

Research output: Contribution to journal › Article

Aqueous phase reforming of xylitol over Pt-Re bimetallic catalyst : Effect of the Re addition Published

Research output: Contribution to journal › Article

[View all \(343\) »](#)

Frequent Journals

Journal of Catalysis

ISSNs: 0021-9517, 0021-9517

ISSNs (Electronic): 1090-2694

Journal

Projects

Practical Lithium Air Batteries

Project: Funded Project › Research

Using Neutrons to Understand Liquid Phase Heterogeneous Catalysis

Project: Funded Project › Research

CCU Programme Grant

Project: Funded Project › Research

[View all \(14\) »](#)

Frequent Publishers

RSC Green Chemistry Series

Publisher

ECS

Publisher

Taylor and Francis

Publisher

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Researchers

[Faculties, Schools and Clusters](#)

[Projects](#)

[Research Portal Policy](#)

Find Research / Researcher



Internal Profile: Head of Department

Master data | Personal | **REF2014** | Reporting

REF2014 overview
Units of assessment
REF1a/c (Staff REF2014)
Summary
Editable 0
REF2 (Outputs REF2014)
Impact statements
Report definitions

Unit of Ass **Physics**

REF1a (Staff REF2014 – Category A)

	ELIGIBILITY		INCLUSION IN REF SUBMISSION	
	FTE	h/c	FTE	h/c
Yes	31	31	0	0
No	0	0	0	0
Pending	0	0	31	31

REF1c (Staff REF2014 – Category C)

	ELIGIBILITY		INCLUSION IN REF SUBMISSION	
	FTE	h/c	FTE	h/c
Yes	0	0	0	0
No	0	0	0	0
Pending	0	0	0	0

REF1a Staff summary – Category A, Eligibility : Eligible / Pending, Submission status : Submitted / Pending

Pending Staff	Eligible Staff	Research Groups	FTE	Individual staff circumstances	RESEARCH OUTPUTS (01/01/08 – 31/12/13)					PGR STUDENTS & FUNDING (01/08/08 – 31/07/13)				
					Within REF period	Number of outputs judged to be returned without penalty	Proposed	Selected for review	Selected for REF2014	Not selected for REF2014	Active PGR Students	Awarded PGR Students	Expected Awarded PGR Students	Funding Awarded
			1		37			0	0					
			1		1			0	0					
			1		15			0	0					
			1		7			0	0					
		1 ECR	1		19			0	0					
Gabriele														
Field, Thomas			1		11	4	4	0	0					
Fitzsimmons, Alan			1		11	4	4	0	0		3	4	0	£492,388.34
Geissler, Michael			1		5	4	4	0	0		0	0	0	£214,012.05
Graham, Bill			1		9	4	4	0	0		10	4	0	£129,056.02
Greenwood, Jason			1		5	4	4	0	0		5	3	0	£209,765.00
Green, Mark			1		10	4	4	0	0		2	7	0	£674,894.60

● Sufficient outputs in REF period
 ● Not sufficient outputs in REF period
 ● No outputs in REF period
 () Outputs in REF period not yet published
 +: The number includes output requested to be 'double weighted'

Equal to the number of outputs to be returned without penalty
 Greater than the number of outputs to be returned without penalty
 Less than the number of outputs to be returned without penalty

Your Academic Staff
Their Associated Publications
Their PG Research Student Supervision
Their Awarded Grant Funding

My messages
Messages 0

My history
School of Mathematics and Physics
Organisation: School
Opened
UOA10 – Mathematical Sciences
Organisation: REF UoA
Opened

Add new

Balanced Metrics Reporting Suite

The screenshot displays the 'Balanced Metrics Reporting Suite' interface, which is a web-based application for managing and reporting on research output. The interface is divided into several sections:

- Left Sidebar (Navigation):** Contains links to 'Master data overview', 'Organisations', 'Report definitions', 'My report definitions', 'Managed report definitions', and 'Scheduled report definitions'. The 'My report definitions' section is currently active, showing a list of report definitions including 'Research Output per year' and 'Maths and Physics - Research Output'.
- Top Bar:** Displays the 'Pure' logo and the 'Queen's University Belfast' name. It also includes a search bar and a 'Report definition' button.
- Main Content Area:**
 - Choose a content type:** A sidebar on the left lists various content types: Activities, Applications / Funding, Impacts, Press clippings, Projects, Funded Projects, Non-funded Projects, and 'Research output' (which is selected).
 - Matrix (analysis):** A table showing research output data across different years (2005-2010) for various organisations. The table has columns for 'Organisation', '2005', '2006', '2007', '2008', '2009', and '2010'.
 - Table (analysis):** A table showing research output data across different years (2008-2010) for various organisations. The table has columns for 'Organisation', 'Author's gender', 'Research output year', and 'Count'.
 - Table:** A table showing research output data across different years (2008-2010) for various organisations. The table has columns for 'Title', 'Type', 'pages', 'Publication date', and 'Visibility'.
 - Chart (analysis):** A line chart showing research output data across different years (2008-2010) for various organisations. The chart has a title 'Chart (analysis)' and a legend.
 - Listing:** A list of research output items, including '1.1. 2009' and '1.2. 2010'.
 - Raw data spreadsheet:** A table showing raw research output data across different years (2008-2010) for various organisations. The table has columns for 'Organisation', 'Author's gender', 'Research output year', and 'Count'.
- Bottom Bar:** Contains a 'Download list: PDF | HTML | Word' button and a 'Help and support' link.

Strand 2

To drive action across research leaders in managing the research portfolio

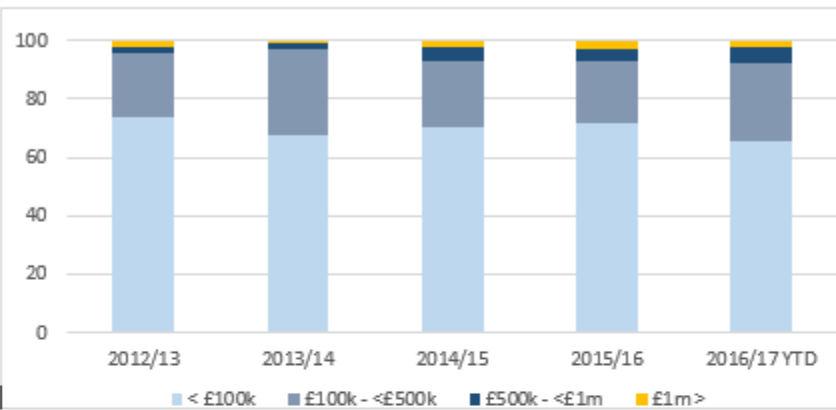
(GRANTS SCORECARD)

Managing at corporate level

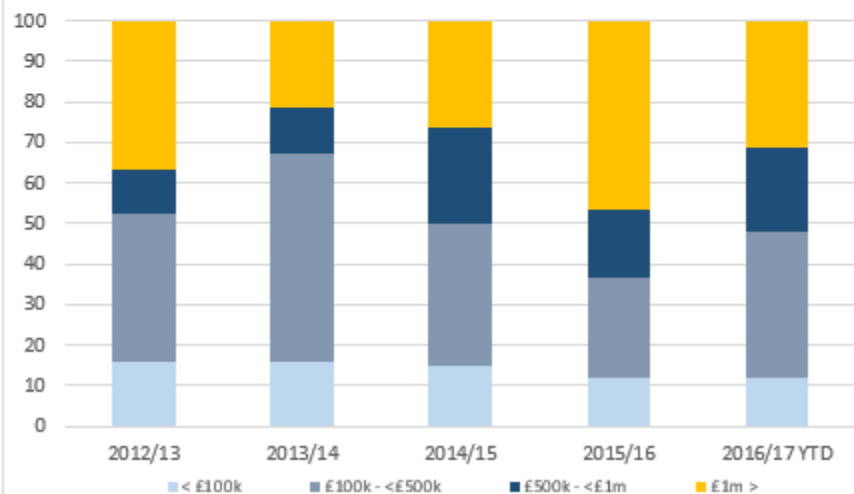
1(a) Value of awards and research income (£m), 2012/13-2016/17 (end June) and forward targets



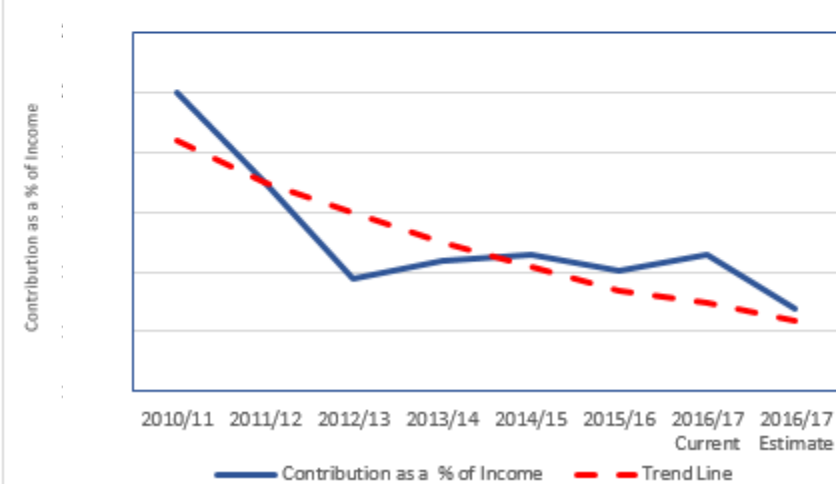
1(b) No of research awards at set thresholds (%), 2012/13-2016/17 (end June)



1(c) Value of research awards at set thresholds (%), 2012/13-2016/17 (end June)

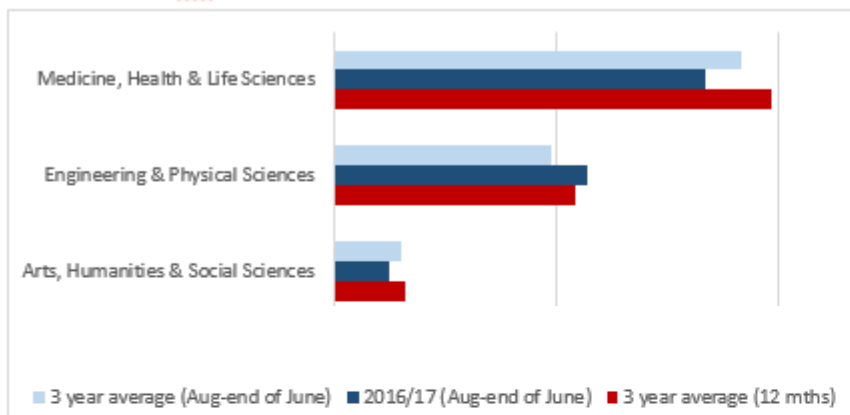


1(d) Contribution trend on core research grants and contracts (2010/11 – 2016/17)

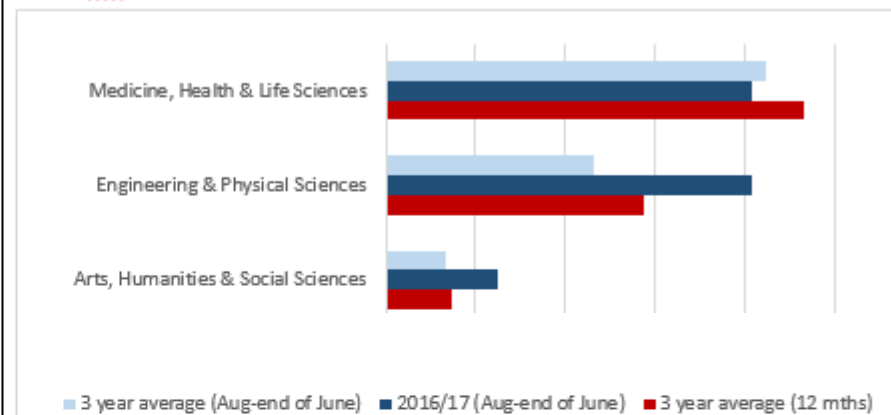


Managing at Faculty level

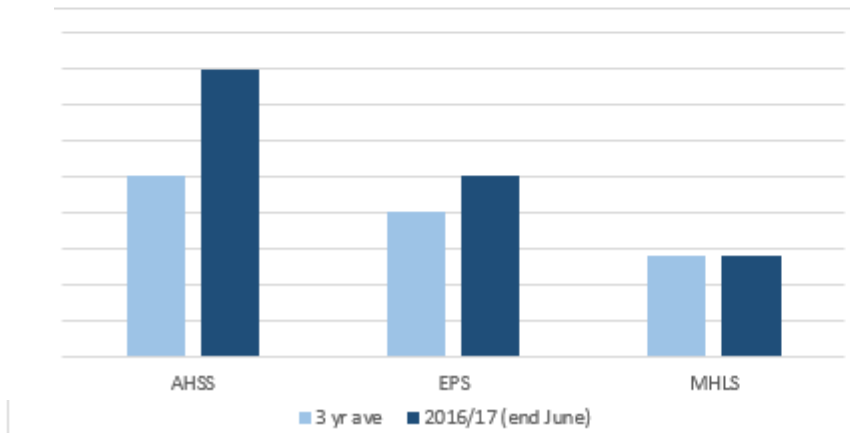
2 (a) Value of applications (£m) 2016/17 (Aug-end June) set against 3 year average (Aug-end June) and 12 mth (Aug-July) 3 year average



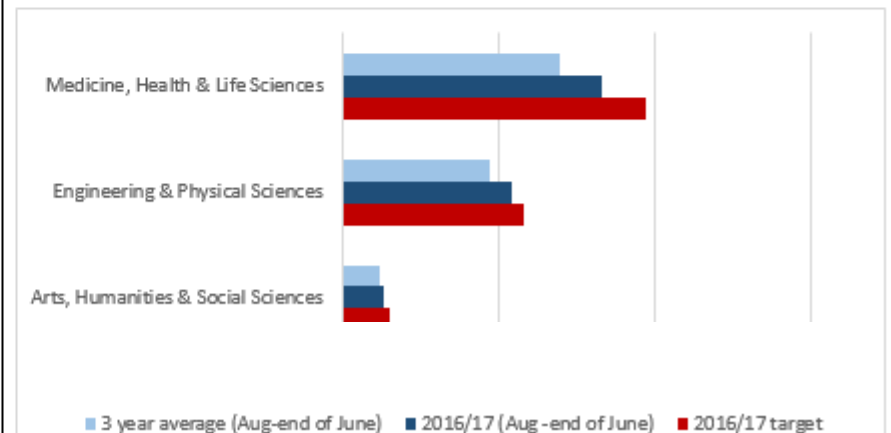
2(b) Value of awards (£m) 2016/17 (Aug-end June) set against 3 year average (Aug-end June) and 12 mth (Aug-July) 3 year average



2(c) Percentage of awards above Faculty threshold, AHSS (£50k), EPS (£200k) and MHLS (£250k), in current year against 3 year average

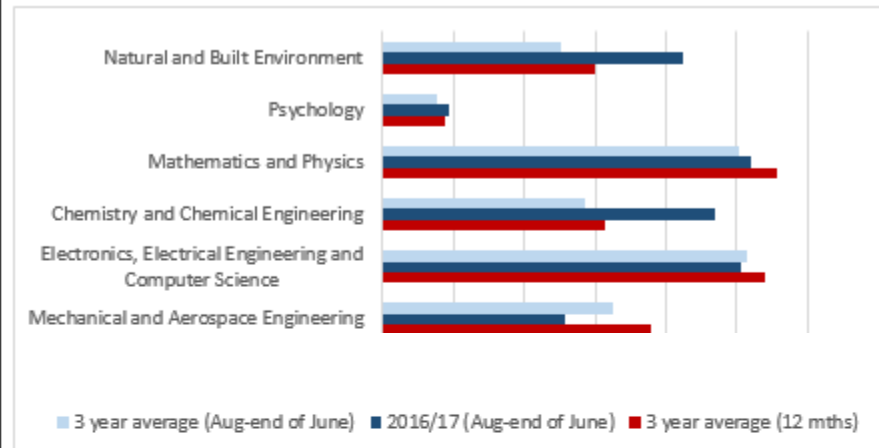


2(d) Value of research income (£m) 2016/17 (Aug-end June) set against 3 year average (Aug-end June) and final year target

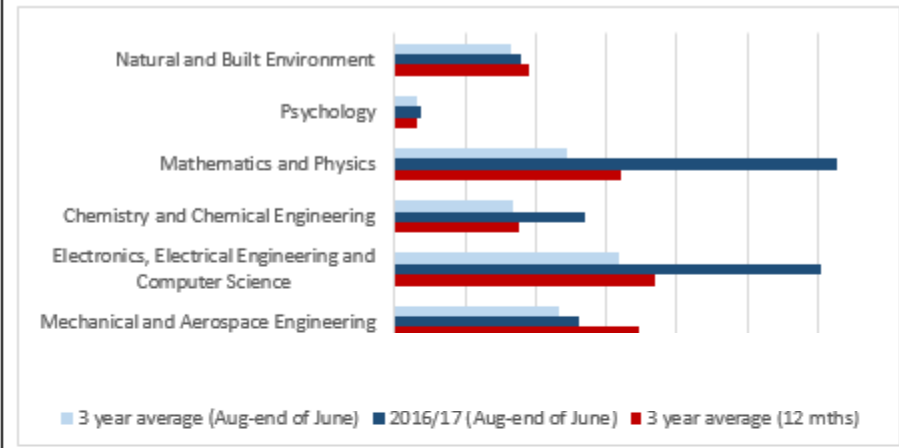


Managing at School/ Dept. level

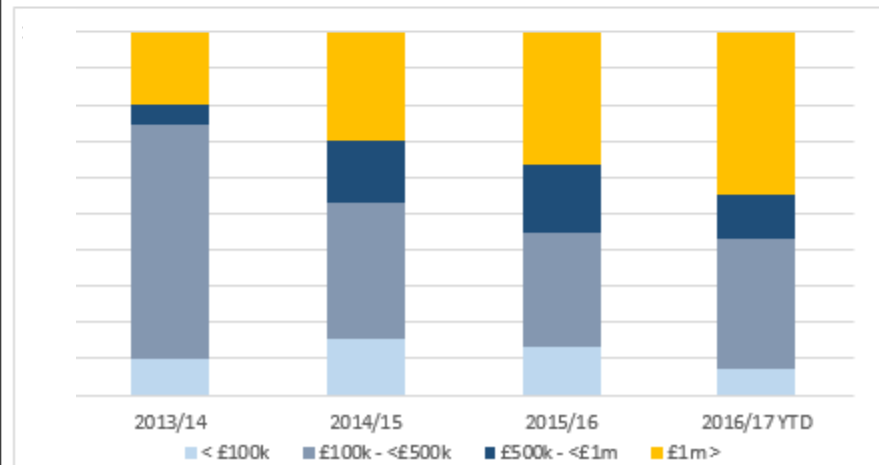
4(a) Value of applications (£m) 2016/17 (Aug-end June) by School set against 3 year average (Aug-end June) and 12 mth (Aug-July) 3 year average



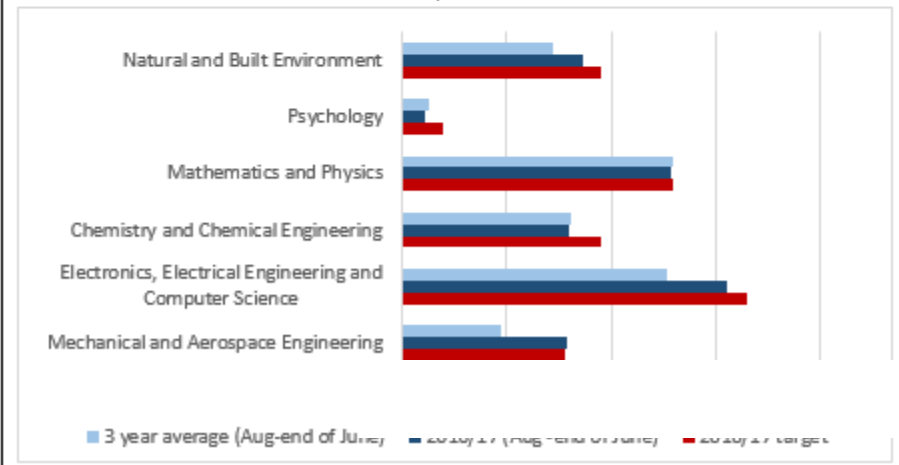
4 (b) Value of awards (£m) 2016/17 (Aug-end June) by School set against 3 year average (Aug-end June) and 12 mth (Aug-July) 3 year average



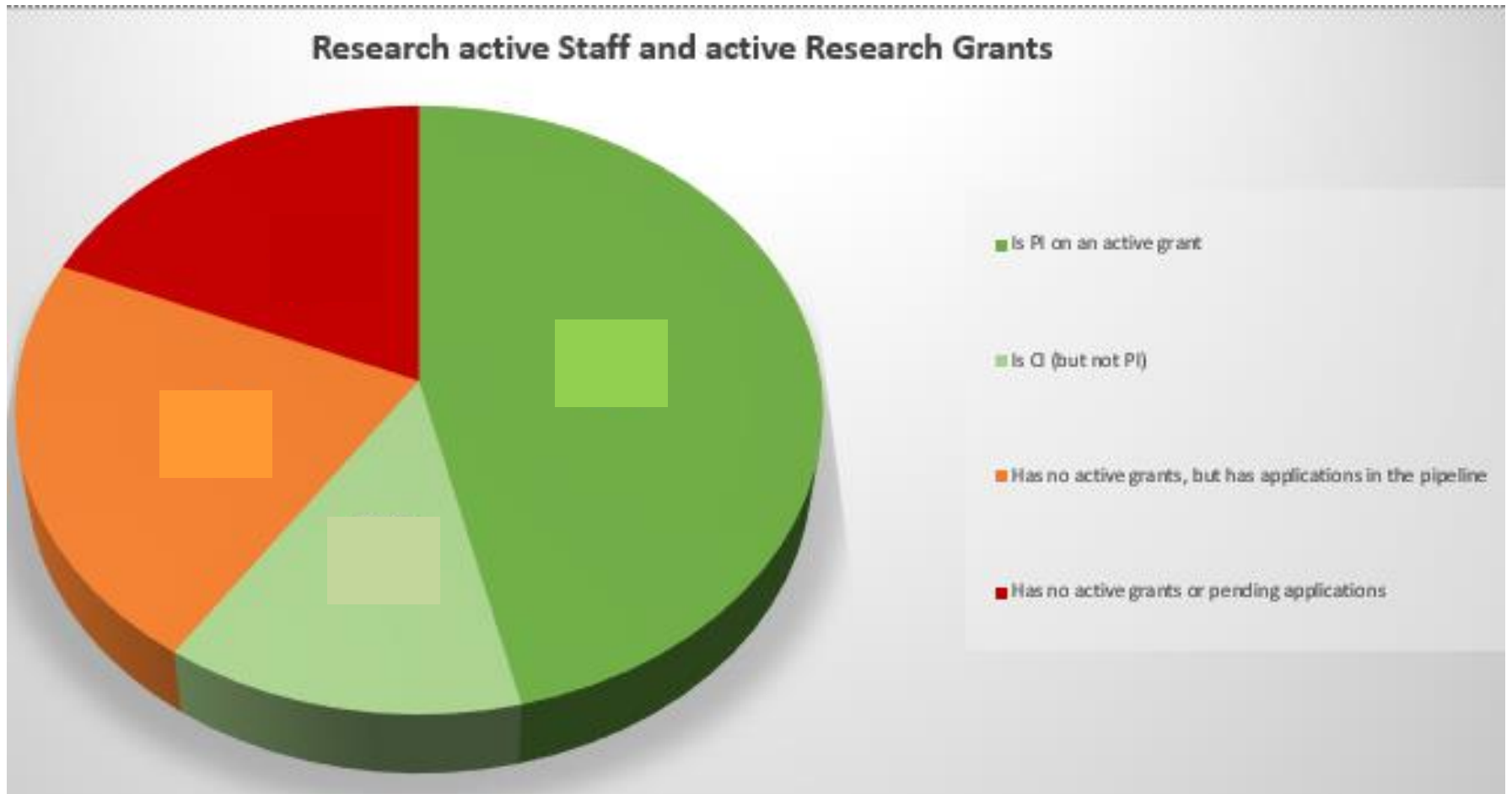
4 (c) Value of research awards at different thresholds (%), EPS, 2013/14-2016/17 (end June)



4(d) Value of research income (£m) 2016/17 (Aug-end June) by School set against 3 year average (Aug-end June) and final year target



Delving deeper



Strand 3

To understand citation performance and collaborative performance

(PUBLICATION IMPACT PLANS)

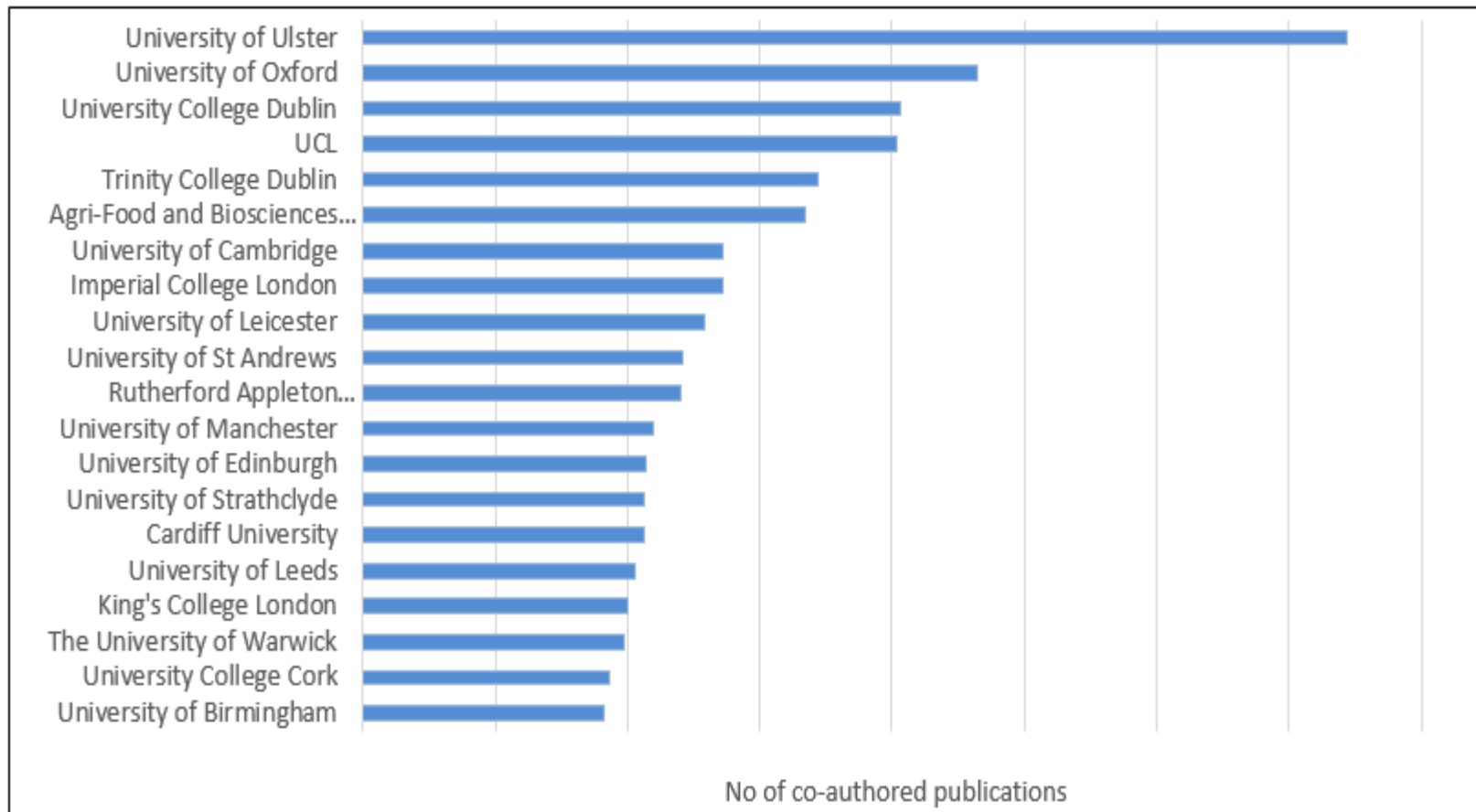
Driving publication impact

- Pilot collaboration for three years with supplier
- Raising awareness of citations
- Exploring links between citations and league tables
- Focused 'deep dive' sessions with three Departments.
- Heavy emphasis on benchmarking against peers

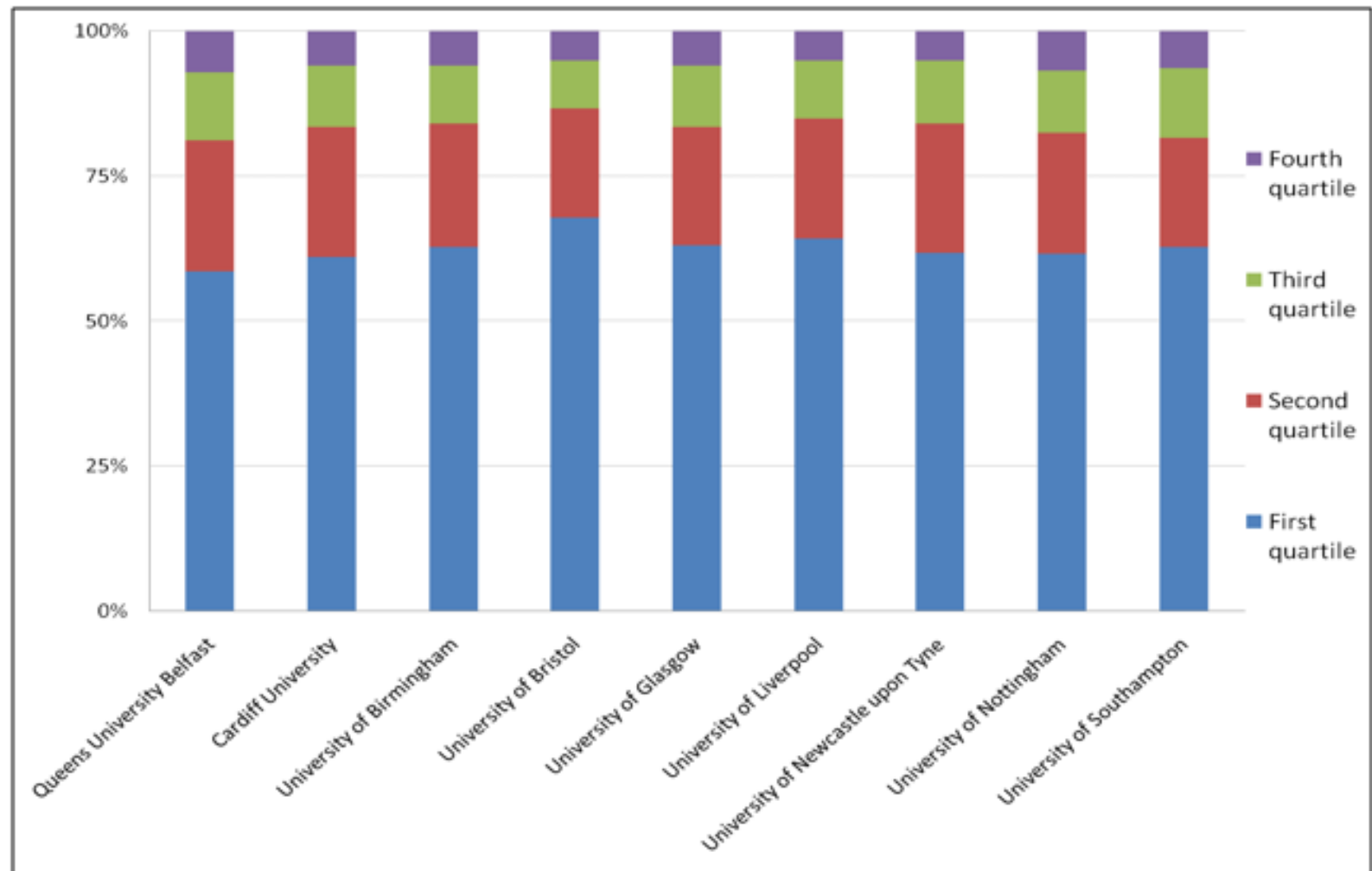
Initial findings

- Queen's had a lower publication output and citation impact compared to peer universities (ave cites per paper)
- International collaboration generally increases citation impact – Queen's performed well, relative to peers, but still a strong concentration with locally based institutions.
- Academic-Corporate Collaboration generally increases citation impact – but Queen's had a lower level of collaboration than peers
- Review and multidisciplinary journals tended to rank higher in citations than original research journals
- Queen's had a lower proportion of publications in the top quartile of journals than peer universities

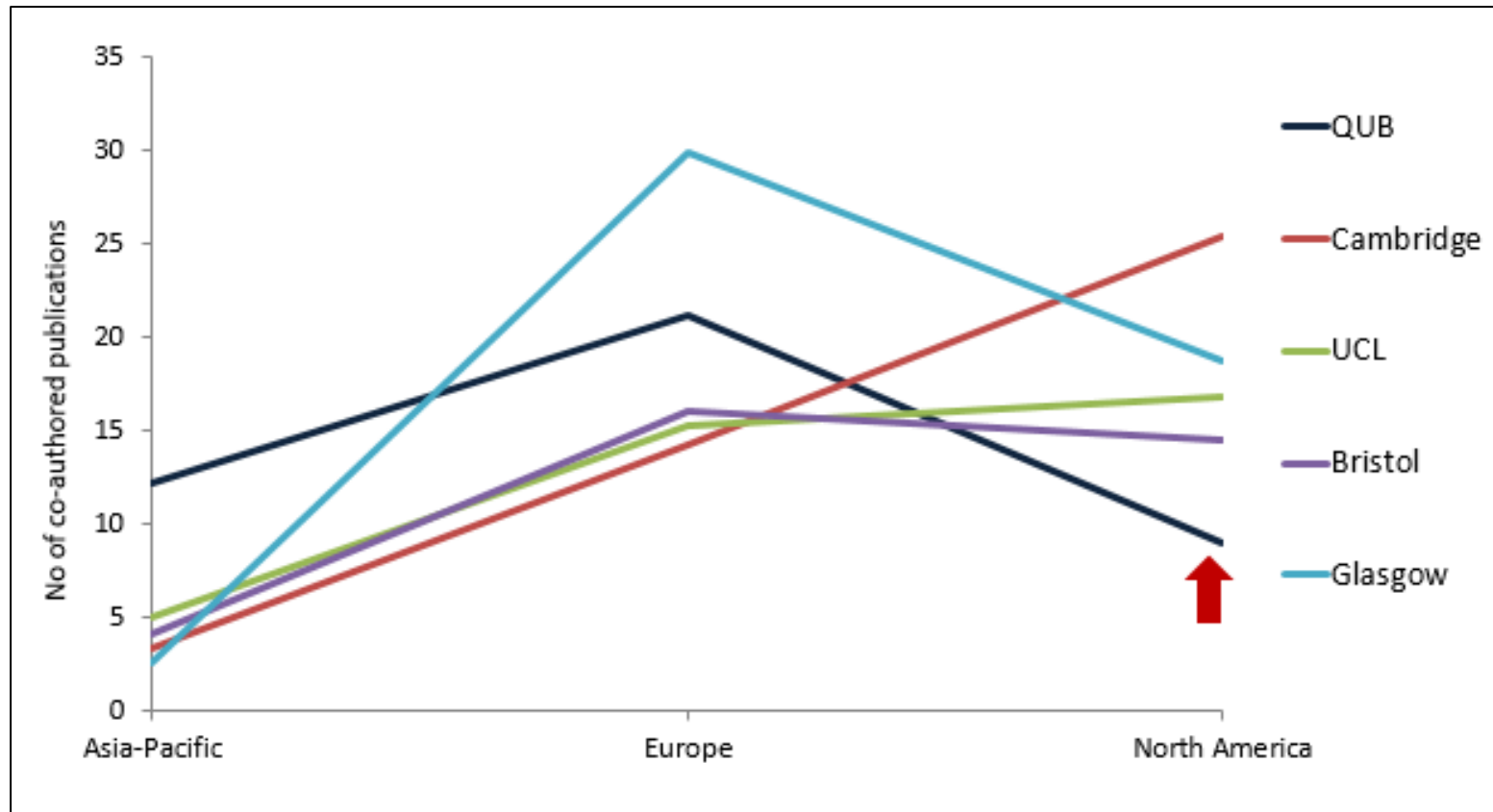
International Co-authorship



Journal quality



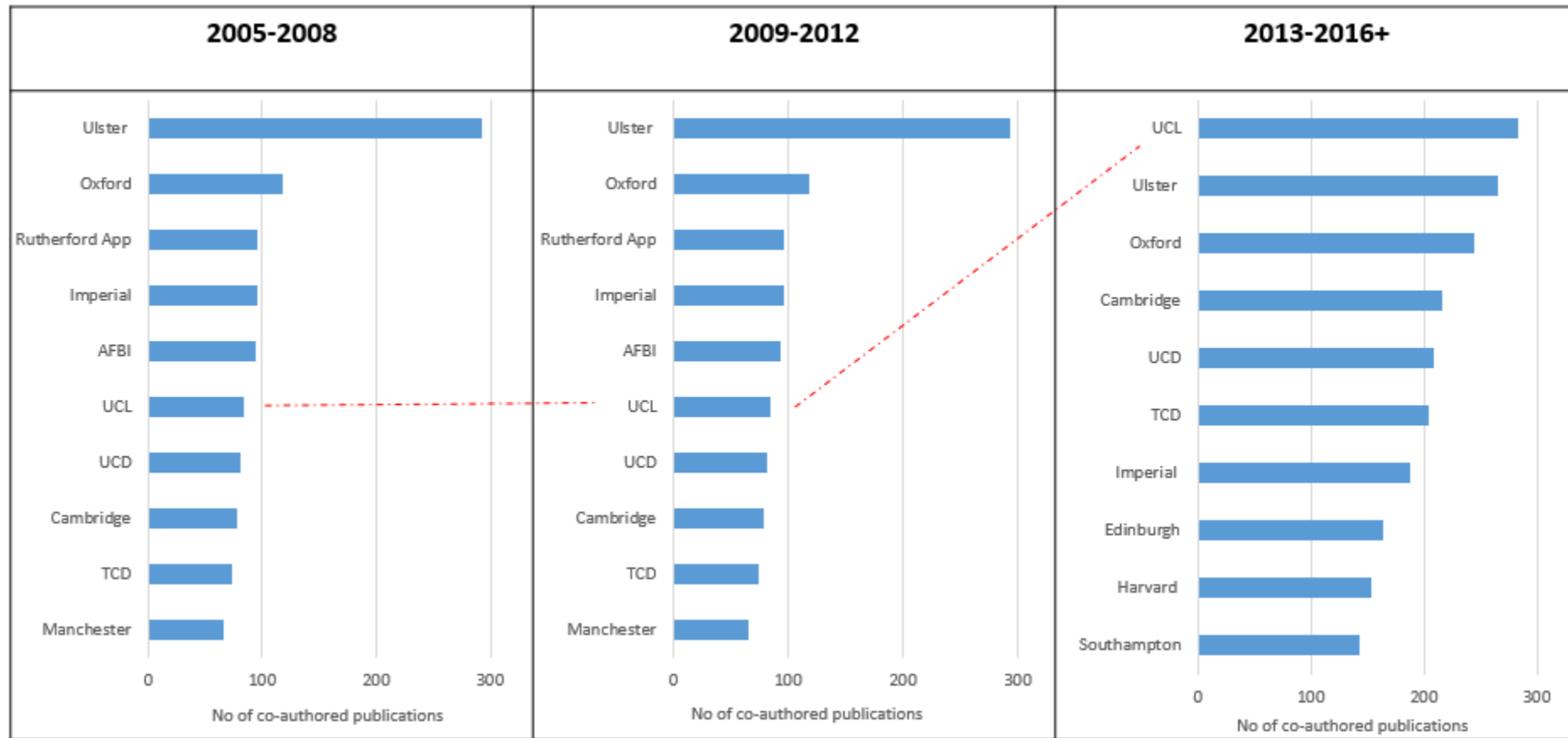
Academic led – A Departmental pilot



Driving action...

- Developed targeted 'Publication Impact Plans'
- Aiming for upper centile journals
- Mentoring plans for early career researchers
- Appraisal-linked targets and evaluation
- International 'placement' schemes to foster broader collaborations

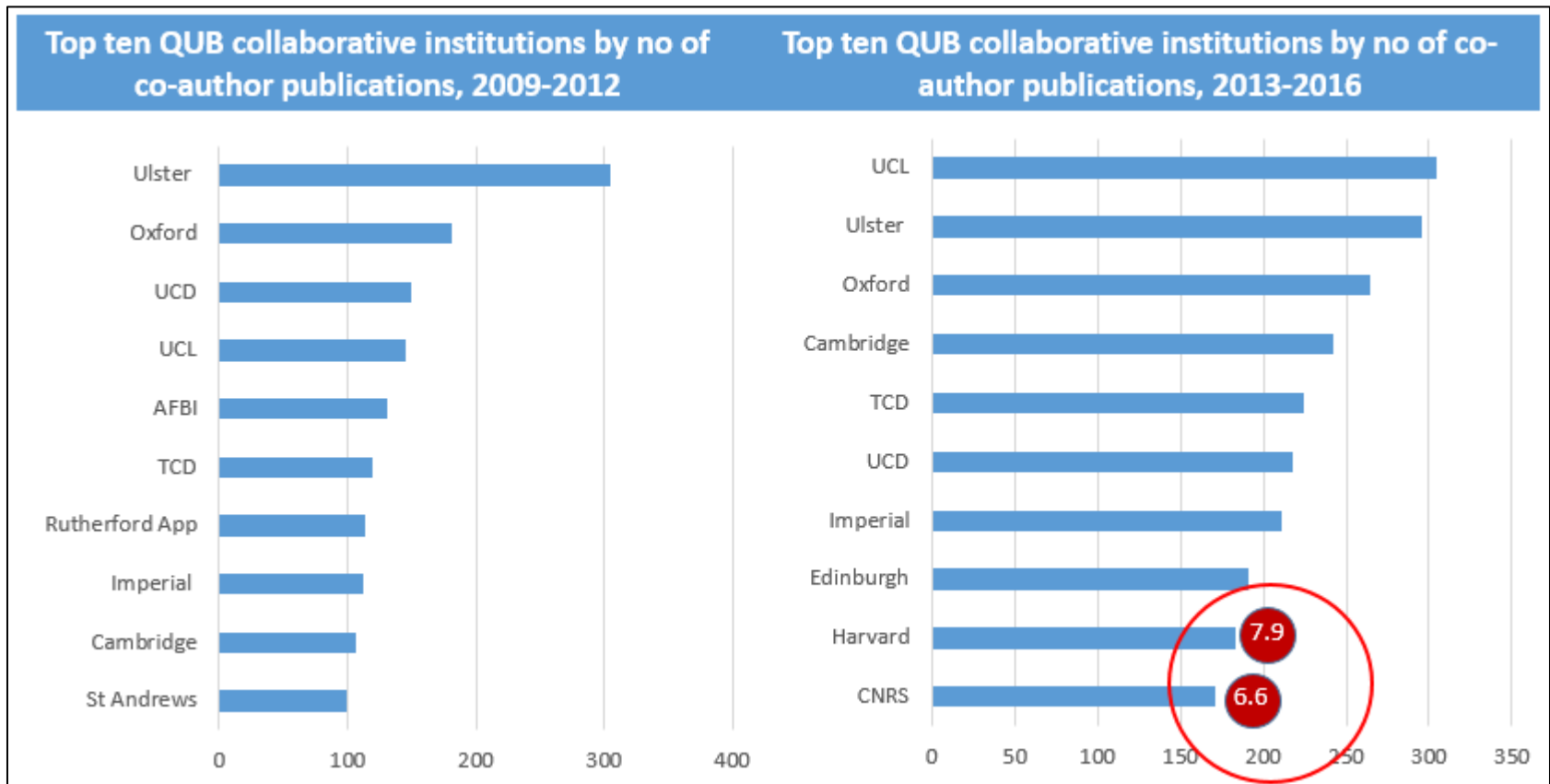
Changes in co-authorship



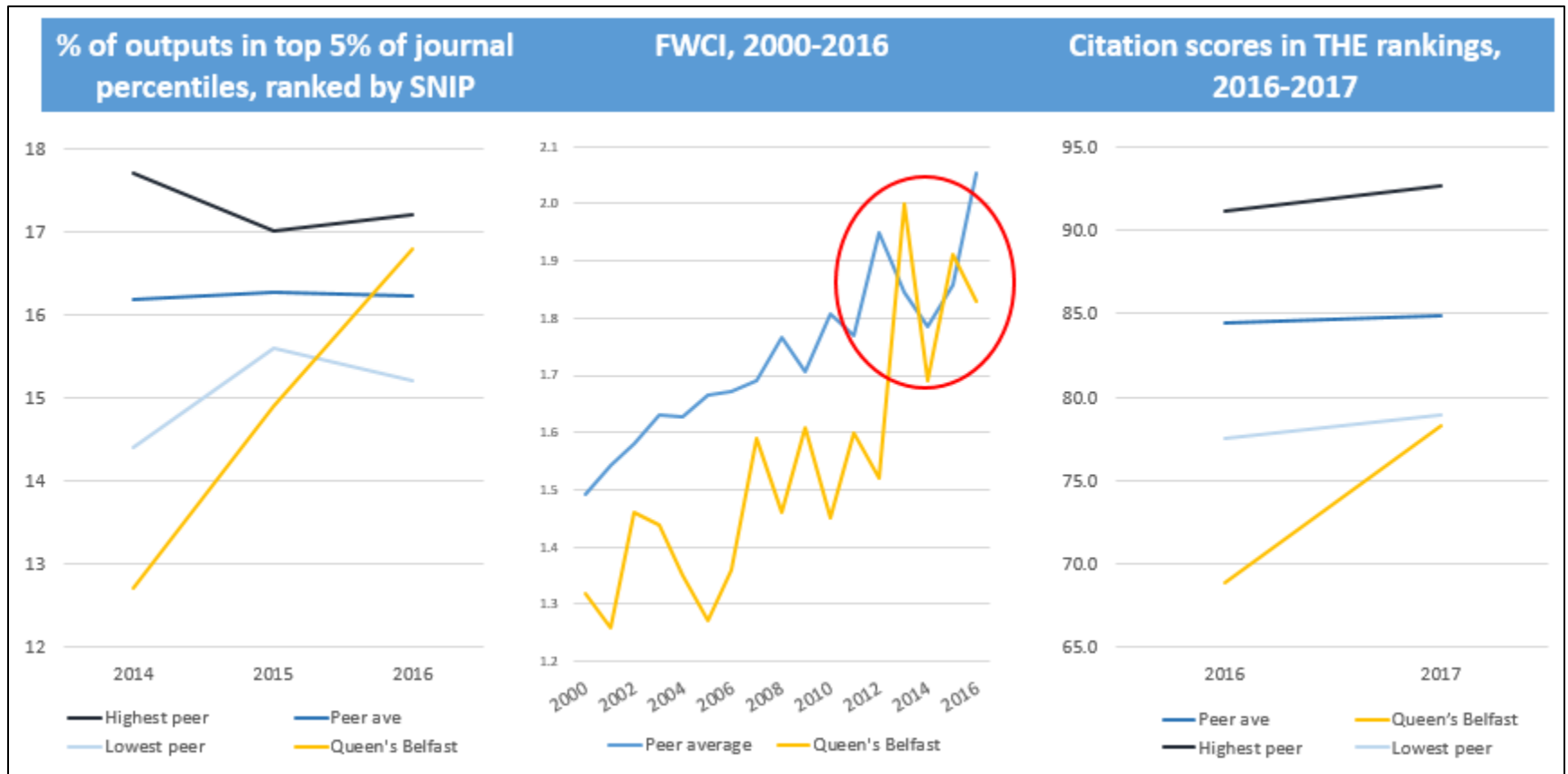
Clear quality improvements

Institution	No of co-authored publications	FWCI
University College London	283	6.32
Ulster University	266	0.94
University of Oxford	245	8.65
University of Cambridge	216	5.87
University College Dublin	209	2.78
Trinity College Dublin	204	3.15
Imperial College London	188	5.27
University of Edinburgh	164	6.14
Harvard University	153	7.77

International co-authorship critical



Significant benchmarked progress



Key messages

- Publication and citation metrics take time to improve
- Involve credible experts – suppliers, RMA professionals
- Critical to involve academics from the outset
- Do not avoid disciplinary differences (e.g. Arts & Humanities)
- Pick pilot areas to build understanding/ illustrate relevance
- Focus on action-planning at local level – and monitor regularly